ADDRESS

OF THE

HON. ALEXANDER L. HAYES,

1793- 1875

OF LANCASTER, PA.

BEFORE THE

Agricultural Society of York Co.

AT THE

ANNUAL FAIR,

AT YORK, PA.

October 7, 1853.

BALTIMORE:
PRINTED BY JOHN D. TOY,
Corner Market and St. Paul Streets.

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ADDRESS.

Ladies and Gentlemen,
Friends and Fellow-Citizens,—

Being the son of a farmer, and having passed my early youth as well as some of my later years in the country, it cannot, I suppose, be thought extraordinary, that I should have taken a warm interest in the cause of Agriculture, or should regard it as the foundation of the general prosperity: since all who are capable of a comprehensive survey of society, must perceive that the successful cultivation of the soil, is one of the strongest elements by which the social edifice is cemented; as it is the direct means of accomplishing the primal command of the Creator, to—"replenish the earth."

There are two objects of chief importance, connected with the present movement in behalf of agriculture: one, is the advancement of the art; the other, the elevation of the pursuit or calling, of the agriculturist.

Those who read Virgil's Georgics, or the writings of Pliny, and M. P. Cato, who left the most ancient treatise extant on the subject, will learn perhaps with surprise the improved condition of agriculture two thousand years ago in the sunny clime of Italy; at the same time, that ~~his~~ wonder will cease, at the immense population, that was then sustained within the bounds of that fair land; for which this circumstance sufficiently accounts. To make the business universally popular, wherever the Roman language was spoken,—as well in the provinces as in Italy, the first work alluded to, and which has been regarded as one of the master pieces of human genius, was composed. But it seems,

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that Agriculture can flourish in perfection only where men enjoy freedom. Liberty having been crushed by the despotism of the Cæsars,—those dark ages ensued, in which all useful and liberal arts were destined to a long eclipse, and with them this art of arts—Agriculture.

It is a remarkable fact in the history of that important grain, wheat, that in those countries of Europe, where it had been chiefly grown, the production fell off by the absolute exhaustion of the soil, to such an extent, that a prevalent apprehension arose of the time being at hand when this invaluable fruit of the earth, which from some notices in the sacred writings, appears in ancient days to have yielded sometimes an hundred fold, must be abandoned, as no longer to be produced in qualities sufficient to remunerate the grower, or compensate the labor bestowed. Nothing can more strikingly illustrate the decline in the proper knowledge and skill in agriculture, than this signal fact. During that long period, the earth was oppressed by innumerable tyrants, who harassed each other with endless wars; and drawing into the profession of arms all the active talent and enterprise, left the cultivation of the earth to the old and feeble, the serfs and villeins as they were called, who were deemed unworthy of the exalted occupation, of cutting human throats. It is not marvelous, that under such culture, pursued for ages, the land was exhausted of its fertility: and that when Europe began to awake out of this long slumber of the intellect, it was found, that some of the essential elements of the fertility of the soil, had been abstracted. In our own times, we have witnessed something similar in our Atlantic States; where ages of exhausting tillage, since the first settlement, have rendered many districts comparatively barren.

The wheat crop will always be a most important concern of the farmer of Pennsylvania. In some States, the value of it may be rivaled by that other excellent grain, Indian Corn, but, in general, throughout this State, it will maintain its pre-eminent value as it does beyond dispute in every country in Europe. To increase the production of wheat, must therefore be a principal aim of the Agriculturist; and when we speak of improving the art, it must always be with reference, more or less immediate, to the cultivation of this grain. The crop or product of wheat, depends upon the soil, the seed, the manner of sowing, (which has relation to the preparation of the ground,) and the securing of the harvest.

In the variety of soils, some are easily known to be better adapted to wheat than others. But it will be found on analysis, that all those which appear least favorable to its growth, are deficient in the principal element of lime. There may be the absence of other constituents also; but lime will invariably appear to be wanting. Such was found to be the case in the exhausted soils of the continent of Europe, worn out during the period referred to by unskilful tillage, taking for successive ages from the earth all it produced, without any return of fertilizing ingredients, to restore and maintain its strength. When the minds of men became roused and excited by the pressure of the consequences resulting from this impoverishment of the soil, they soon discovered the deficiency of lime, and set to work to remedy it by decomposing the rock or earth which is generally distributed over that continent, in the form of carbonate of lime. This was done, by the simple action of fire discharging the carbonic acid, and leaving the basis, lime, to be disintegrated and applied to the soil in the condition of powder, as quick lime,—a process with which we are all familiar. The effect of this application was immediate, and, in many instances, almost magical, in restoring the lost fertility of the land.

The advantages accruing from any fertilizing material, given to the soil, are so great and obvious, that the practice, once commenced, is not likely to halt, or circumscribe itself. When one fertilizer is found useful, it will not be discontinued unless to make way for something more efficacious, nor will the spirit of improvement rest content with a single means, when there are also many others within reach, which may prove valuable in enriching the soil.—So lime was not only a potent renovator of exhausted and worn out lands, but led to the introduction of other manures and to a system of improvement, which very soon in many places more than realized that triumph of doubling the crops, (or making two blades of grass grow in the spot where but one grew before,) which the English philosopher declared, entitled him who achieved it, to more honor as a benefactor of mankind, than the whole race of politicians put together. Not only other forms of earth have been brought into requisition, but waste and decayed vegetable and animal substances, have been employed, as manures; and, as all know, with eminent success.

When this country was settled by our ancestors from Europe, they found a virgin soil generally rich in all the elements of fertility. Having cleared it of the timber and woods, with which it was clothed, they broke up the ground and sowed their seed. Year after year, for ages, they continued to plough, and sow, and reap, never reflecting, like a thriftless prodigal, that he who is constantly taking out of the tub, without putting any thing into it,—must ere long come to the bottom;—as poor Richard said. The effect is, that in all the Atlantic States, there has been a lamentable deterioration of the quality of land: and this we now plainly see, was the inevitable result of the course of tillage we have alluded to,—constantly taking from the earth all its crops, and never returning any thing to repair the loss.

Eighty miles south of where we now stand, there are tracts of land, which one hundred and twenty years ago produced forty bushels of wheat to the acre. One hundred years of this exacting culture, had so impoverished the soil, that the crop was considered good, when it yielded ten bushels per acre. The average, over a large district, did not, according to my early recollections, amount to one-half that quantity. No wonder, the inhabitants abandoned their homes, for the far West, and that the population was stationary for thirty years; the emigration, during all that time, keeping pace with the natural increase. Had the original fertility of the land been maintained by a due course of cultivation, this deplorable loss would not have ensued.

The adjoining county of Lancaster is rich in its mines of iron ore, chrome, lead and copper; but valuable as these mineral deposits may be, they are far exceeded, in that respect, by the limestone rocks which are cropping-out and showing themselves, here and there, throughout one-half of the county. These materials of an inexhaustible abundance of lime, furnish a cheap and ready means of renovating our worn-out soils, of improving still further those which are considered the best, and of fertilizing our comparatively barren hills.

On a visit, two years ago, to one of our least fertile townships, I was surprised at the flourishing condition of the farms, where the land was naturally so thin and unpromising. The fields were covered with a luxuriant vegetation; and the buildings, orchard, and fences proclaimed that the proprietors were well doing, and to use an expressive phrase, lived at home. I was told that appearances, in this instance, did not deceive; that within ten years a revolution had been wrought by the use of lime; and that whereas, fifteen years ago, the man who owned forty or fifty acres of land, in that neighborhood, was sure to starve on it, if he had no other resources, now, the owner of such a tract, would grow rich from its products. And in fact this land, under the new plan of dressing it with lime, produced as good crops as the limestone lands in the rich valley of Pequea. There are other parts of that county where the lands, by the application of lime, have been enhanced in value, from 500 to 1000 per cent. The value, indeed, which has already been added to the real property of Lancaster county, by lime, it is impossible to calculate; and yet the use of it is but fairly begun. I think it is safe to say, that within a quarter of a century from this time, it will treble the annual production of the whole country.

More than twenty years ago, I was accustomed to pass several times a year, along the road from Reading to Lancaster, and just after leaving a tract of hilly woodland, called the forest, came, in the course of this journey, to a village, now the borough of Adamstown. It lies in a very narrow valley, between pretty lofty hills. The soil is the red sand stone; and it was, at that time, thin and apparently unproductive. The farms in the vicinity might have been purchased, as I have been informed, for $10 or $15 an acre. Ten or twelve years since, they began to lime their land; and two farms in that vicinity, have, within the last three years, been actually sold for $100 an acre. This land is now as productive as any in the county. Facts like these should convince every skeptic of the value of lime. They are particularly encouraging here, where there is so much land precisely of the kind, on which the application of lime would place an enhanced value of 500 to 1000 per cent. Is there any other means by which wealth can be so certainly and speedily accumulated? The owner of a small farm valued, say at $1,000, in two or three years, may, by an outlay of a few hundred dollars, which will be more than reimbursed in the mean time by his increased crops, find himself worth $5,000.

In view of such facts, it would be perfectly idle to enter upon the discussion of the question, (if question it may be called) whether lime is a fertilizer, or whether it is beneficial or not. Assuming that it is one of the most important means of improving the soil,—in what manner ought it to be applied?

The quality or condition of the soil, must always be regarded, in determining this question. If it be one of considerable strength, already capable of producing a heavy vegetation, and is full of insect life, then, it would seem, the lime should be applied quick from the kiln and ploughed in, so that its action upon the organic substances, may be exerted with energy, converting into nutricious sustenance for the crops, the vegetable remains, as well as the living animal matters with which, in so many various forms, the soil is replete. It is known to be very destructive to grub-worms, animalculæ, and insects of all descriptions, with which the ground is tenanted; and the soil is naturally made richer by their dissolution. If the soil is thin and gravelly, it may be better to apply it to the surface, as a top dressing and after it has been for sometime slaked. Such soils are supposed to require a less quantity of lime, and show the effect of the application more strikingly than those which are stronger. While it apparently gives a greater consistency to the former, it operates upon stiff clayey lands, in such a manner, as to render them mellow and friable.

Lime has also the remarkable property of attracting moisture from the atmosphere: which makes it invaluable in our dry seasons, enabling the crops to bear the effect of our long summer droughts with comparatively small injury.

But not only is there a great variety in soils, but also in the constituents of the limestone rock, and consequently in the quality of lime, which is manufactured from it: therefore in order to reap all the benefit derivable from this substance, the lime as well as the ground should be analyzed.

There are some instances, (though these are rare,) in which lime appears to have had no effect on land. A neighbor of mine, while I was spreading lime over my ground, professed his utter want of faith in its efficacy, and on my inquiring the reason, told me, he had applied lime to a farm he lived upon a few years before, lying along the river, near the borough of Washington and he could not see, that it ever benefited his land, to the value of one silver sixpence.

Dr. ———, of Pequea Valley, also informed me, that in using lime upon his farm, he had observed that in one of his fields it was perfectly inert, producing no effect at all; this lay along the Pequea Creek; whereas, on the other fields of his place, it was of manifest advantage.

The true explanation of such facts, I take to be, that these soils had already abundance of lime in them; adding more was, therefore, mere superfluity. A proper analysis would have saved these persons their bootless expenditure of money, time, and labor,

Chemistry, a science of modern growth, has been of incalculable service to Agriculture. It has disclosed the fact that lime enters into the composition of all plants, and especially of the cereal grains and grasses. We perceive in this, a reason why the deeper soils of valleys and what are called the river bottom lands, with their rich loam, should be replete with this substance mixed with the soil. Deposited on all adjacent higher grounds by the decayed and decomposed vegetable and animal remains, it is carried down by rains and snows, in the course of ages, and left on the lower. Hence its abundance there, and its scarcity on gravelly eminences and the hill-sides. The application of Chemistry to Agriculture has further shown, that there are certain constituents essential to every fertile soil, though the proportions in which they exist are not determined, and can only be ascertained by many and careful experiments, made for the purpose. Those constituents are lime, potash, magnesia, soda, alumina or clay, silica or sand, humus, iron as a peroxide, chlorine, phosphoric acid, sulphuric acid, and animal and vegetable or organic matter.

Each of these substances,—in some quantity,—must absolutely be present; an abundance or excess of any or all the rest, will not atone for the want of it. As to lime, which may appear to be receiving undue attention, it enters into the constitution of all plants and of every part of them, existing combined with various acids in the root, stalk, blade, and grain, or seed. In animals, it forms with phosphoric acid a large proportion of the bony structure. Its application therefore is directly beneficial to the growth of the plant, as any food, which promotes the growth of the animal is beneficial: but it is of still further benefit, by aiding the decomposition of vegetable matters in the soil and thereby disengaging the mineral substances they contained when organized, and fitting them for the support of a new growth.

Lime is also believed to be a powerful solvent of the sand in soils, which contains many of the elements of plants; these being set free by its action, minister to the growth of vegetation. This, by many, is regarded as one of its most important properties. As a fertilizer it combines qualities not often united, being not only rapid and powerful in its action, but it is also durable. Many are the instances, in which its effects have been visible for more than twenty years after it was applied. In this respect, it excels all other manures. In most of them, indeed, it enters more or less largely as a component part, whether they consist of animal or vegetable remains. It is a material constituent of the most costly of the concentrated fertilizers. It is recommended by its cheapness and its adaptation to all sorts of lands, for with extremely few and rare exceptions, it is never applied without essential advantage; and it is particularly commended to the farmers and land owners of York County, as affording the ready and sure means of rendering the thin, gravelly, unproductive soils of your hilly townships as productive as those of your fat and luxuriant valleys. Though we have suggested some considerations for determining how it should be applied, yet it certainly is a characteristic of lime, that, apply it how you will, whether as top-dressing or ploughed in with the seed, whether fresh from the kiln or after it has lain for weeks and months exposed to the air,—under all circumstances,—it is beneficial.

In speaking of the improvement of agriculture, we naturally advert to the renovation and enrichment of our soils; for upon this foundation, must all improvement be rested. No one can be expected to devote time, labor and money to an ungrateful soil, which makes no adequate return for his pains or expense.

The first object then is to enrich your land; and it is a most cheering consideration, that the land begins immediately to compensate the care bestowed upon it; the very first crop, in most instances, largely overpaying the cost of fertilizing the soil. From what has been said of the composition of a good soil, it is evident that in this process of improving land, much is to be gained by calling science to your aid. The physician before he attempts to administer to a patient, first ascertains his disease;

were he to give his medicine without informing himself upon that point, he would be more likely to kill than cure. So, when you are about to administer the means of restoring your soil and increasing its fertility, you should inquire and learn, in what constituents of a good soil, it is deficient. This may be perfectly ascertained by the tests, re-agents and processes, which chemistry teaches. Your soil should be carefully analyzed. You may possibly find it abounding in all the requisite ingredients but one or two. All you have then to do, is to add what is wanting. Thus you may save yourself a large amount of useless trouble, and money thrown away to no purpose.

But chemical analysis, does more for the art of the agriculturist; it analyzes the plants he cultivates, as well as the soil in which they are grown; and teaches him, with as much certainty, what food in the shape of the particular sort of manure, his wheat, his corn, his potatoes, oats, clover, timothy, or tobacco require, as experience has taught him what grain or provender he must give his horses, his cattle, sheep or swine, to keep them in the best condition. Here again, by an intelligent and judicious accommodation of means to the end, he economizes time, labor and money.

The art of agriculture, under the guidance of accurate observation and scientific reasoning, is carried forward until it attains the point of producing the largest quantity of the fruits of the earth with the least expenditure of labor—in other words, the greatest yield at the smallest cost.

In discoursing of the improvement of the soil by the use of fertilizing substances, though lime has been dwelt upon for the reasons assigned; yet the farmer is not to neglect other numerous and valuable materials for the forming of manures. These which are to be gathered on every hand, he must accumulate and preserve: not suffering to go to waste, as is too often done, the drainage from barnyards, cattle-sheds and manure heaps, but saving even the animal and vegetable offals of kitchens, and preventing as far as possible, all gaseous exhalations from these sources. Liebig, the great chemist, says: that with every pound of ammonia which evaporates, a loss of sixty pounds of wheat is sustained. All vegetable and animal matters on a farm, whatever has had life, contain substances, of which the living structure of vegetation may be recomposed; and the drainage of cattle sheds, manure heaps, the washings and scourings of kitchens and houses, yield the essential elements of vegetables in a state of solution; that is to say, ammonia, potash, soda, lime, magnesia, silica, albumen, mucus, chlorine, and phosphoric and carbonic acid. That such materials of fertility should be suffered to run to waste, is surprising—unaccountable. The careful farmer should allow nothing to run away in the form of a fluid, or fly away in the disguise of a smell. On the contrary, he will form his compost heaps, collecting for the purpose the various weeds, grass, stubble, leaves, ditch scourings, bones, and other animal matters. Many of the vegetables which may be gathered about a farm, contain much more nitrogen, than the straw of grain, and are very rich in the organic elements. The animal matters are often still more valuable, as they may be mixed with any earthy substance. Flesh, bones, hair and wool, are exceedingly useful to vegetation, giving off, during decomposition, much carbonic acid and ammonia, for the nutriment of plants. Actual analysis is said to have shown, that one hundred and fifty-four pounds of flesh, bones and hair, contain as much nitrogen as one thousand pounds of stable manure; and the carcass of a dead horse is of more value than twice that quantity.

But in addition to such domestic sources of fertilizing ingredients, there are many concentrated fertilizers, which, though costly, are often found to return a better interest on the money invested in them, than some more promising speculations, by the great increase of crops resulting from their application.

At the head of these, stands the guano of Peru. It costs about forty-five dollars a ton. I will give you my recollection of an experiment recently made, I believe in this county, as it was related to me a few weeks since, by the gentleman who made it. He had applied to ten acres of land, one hundred and eighty pounds of guano per acre, upon a crop of wheat; which yielded twenty-five bushels per acre, of so superior a quality, that it was eagerly sought for seed, and sold at twenty-five per cent. over the market price of other wheat. Without the guano, his land, he believed, would not have yielded ten bushels to the acre. Let us see, what he gained: we will take one acre for the calculation. First then, the guano cost him per acre, $4 05. The increased quantity of grain was,

15 bushels worth, say	$18 75
10 bushels besides increased in value, twenty-five cents per bushel,	2 50
	$21 25
From this deduct the cost of the guano,	4 05
Leaving	$17 20

that is, he laid out $4 05, and in nine months, received back $17 20, or 424 per cent. Is not this putting money to good use? and no usury either.

But in fact, there should be added to this calculation, the straw and pasture which may reasonably be estimated at twice the value they would have had, without the guano. Hence, it will appear, how richly one application of this fertilizer repays the expenses of its purchase, though its effects may not extend beyond the first crop.

The most active constituent of the guano, is ammonia, which enters largely into its composition; and this is one of the most volatile of substances; to which circumstance, it is owing that the virtue of this fertilizer is exhausted by the first crop. It is a *desideratum,* to fix this substance ammonia, so as to render it a more permanent food for the vegetation of the soil it is applied to. A gentleman of Philadelphia, who has given much attention to the improvement of agriculture by the use of fertilizers, has happily succeeded in obtaining this result, and by means the most laudable. He had observed, that there were two substances, rich in the best elements of fertility, that were regarded as mere nuisances by the large establishments, where they were produced: one, the waste liquor of the gas works, rich in ammonia, which was drained off into the Schuylkill river, to the vast discomfort of the finny tribes by which it is tenanted;—the other, the crushed and disintegrated bones, which are charred and employed by the sugar refiners in their manufacturing processes, and which, after being thus used, were thrown out in heaps and freely given to any, who would do the favor to haul them away. Here, was phosphate of lime, one of the best manures. The idea occurred to him of combining these substances; and he perceived, that if the ammonia of the gas liquor could be fixed in the phosphate, so that it would not be constantly flying off as it is from the guano, but be soluble in the compound, the wished for result would be attained. He first secured the acquisition of these waste substances, which had been regarded as worse than useless. He next obtained the services of an able practical chemist, a Frenchman; and renting from the city a large building in N. W. suburbs, which was luckily vacant, had the machinery and works constructed for the manufacture on a large scale, of what is called, by a name which is itself a description—*The Ammoniated Super Phosphate of Lime.* The works were commenced about the beginning of June; and before the end of that month, the manufactured article was in the hands of the agent employed for its sale.

It is in the form of a dark gray powder, granulated like coarse gun powder, free from any offensive smell, clean to handle, readily soluble in water, without evolving any odor whilst undergoing the solution, but yielding it immediately and abundantly on the application of quick lime, thus showing that the ammonia has been fixed, and remains fixed though the compound is dissolved in water.

I visited this manufactory in July, in company with the proprietor; and I have no hesitation in saying, that if this fertilizer perform what it promises, (as I believe truly,) he will have deserved the best honors of the city of his residence, and the thanks of every agriculturist in the country. Perhaps you will indulge me, in hearing the advertisement, which was published on the introduction of this new substance to the market, and which gives a full and interesting account of its properties and mode of application.

"JOURDAN'S AMMONIATED SUPER-PHOSPHATE OF LIME.—*A Few Words to Farmers.*—Every sensible farmer soon finds out, by experience, that it costs as much to sow and till poor, as it does rich land; and that in no way can he lay out money so profitably as in the purchase of good fertilizers. Crops on poor land make slow growth, and remain long exposed to destruction from flies and worms; whilst those on rich soils, push forward so rapidly as soon to get beyond the power of such destructive enemies. Barn-yards and stables which have heretofore been depended upon as the main sources of manure, prove incapable of furnishing sufficient supplies to meet the demands of husbandry; and of late years, an astonishing amount of concentrated fertilizers have come into use, especially in France and England. These differ greatly in their relative values, some being worthless, whilst others abound in fertilizing elements, more or less favorably combined by nature and art. There are few farmers, at the present day, who are not prepared by experience to report favorably of the excellent enriching qualities of guano. But all must regret, that its effects are so transient, owing mainly to the very volatile nature of the ammonia—its most valuable element. To prevent this loss, ploughing under ground, and mixing with plaster of Paris are commonly practised. But ploughing under can serve to arrest the escape of the ammonia for a very little while, so that the first crop may get a small portion; but none will be left for the benefit of succeeding crops. The same observation may be applied to stable and barn-yard manures, so far as their ammonia is concerned. The prevalent notion, that the addition of gypsum to guano will prevent the escape of its ammonia, is a deceitful error; a reliance upon which, has occasioned great loss to farmers. The fact, that it requires five hundred pounds of water to dissolve one pound of plaster of Paris, shows clearly that the amount of ammonia which can be fixed by such a slowly dissolving substance, must be too small to prove of any essential service.

"It is therefore evident, that any fertilizer, rich in super-phosphate of lime (or bone earth) in a soluble state, and containing other fertilizing agents in proper proportions, among which is abundance of ammonia, so fixed as to be no longer capable of flying away and escaping into the atmosphere, furnishes the great desideratum for farmers. And this is precisely what is accomplished in the ammoniated fertilizer, prepared by Mr. Augustus Jourdan, a practical chemist of long experience. Whilst rendering a return for the outlay at first equal to Peruvian guano, it has the important advantage over this great fertilizer of being much more durable in its effects, and consequently, must be far more profitable in the long run to the farmer; whilst its application is made much more conveniently. It is especially recommended as a renovator of worn out soils of every kind, and as a top-dressing to dairy and grazing farms, seldom turn up by the plough, to supply the great loss of bone earth, &c. carried off in the milky products, and beef sold away. Also, for maintaining the strength of land which has furnished heavy crops of grain or hay.

"DIRECTIONS FOR USING JOURDAN'S AMMONIATED SUPER PHOSPHATE OF LIME.

"It is free from lumps or any unpleasant smell, and may be scattered broadcast as regularly as possible over the ploughed ground previous to harrowing, and before or soon after planting or sowing the seed. From two hundred pounds to four hundred pounds broadcast, or a less quantity scattered in the hills, or employed as a top-dressing, will suffice for an acre, which will bring the cost at an average rate of $6 per acre. It answers admirably for a top-dressing for grain or grass fields in early spring, as soon as the frost is out of the ground. No danger need ever be apprehended of the escape of its ammonia, from lying exposed to the air, as it cannot possibly fly away, but must remain with the phosphates and other fertilizing ingredients, till gradually dissolved by rains, and carried down to the roots of plants which receive them with avidity.

"Wheat, corn, oats, rye, buck-wheat, peas, beans, clover, potatoes, turnips, carrots, sugar beets, cabbage, tobacco, cotton, &c. are all rendered astonishly productive, by the application of this fertilizer, which abounds in the elements they all require for their perfection. Fruit trees and vines are also rendered exceedingly productive by its use.

"JOURDAN'S AMMONIATED FERTILIZER is put up in strong bags containing about one hundred and sixty pounds each, and being dry and free from unpleasant odor, can be carried any distance with little or no inconvenience or expense. The preparation is made in strict accordance with chemical principles, and warranted to contain no substances which have not been proved to be active fertilizers. Mr. Jourdan's great object is, to secure the confidence of farmers, by furnishing them with a potent fertilizer, and he pledges himself to maintain its purity. As land well dressed with this fertilizer, will need no application of lime, this should not be spread for the same or following year, on account of its tendency to disengage ammonia, and expel it from the soil. But plaster of Paris may be used at any time, if thought necessary."

I had intended when I commenced this address, to discuss the subject of ploughing and the due preparation of the ground, by deep ploughing and thorough pulverization, involving the consideration of the time for sowing; also, the proper care in the choice of seed and the improvement of their quality, collecting for this purpose the best specimens of the several sorts or varieties, and propagating from them alone: also the best time for harvest, in relation to the maturity of the grain; which is a point of no small consequence in the art and mystery of the agriculturist. But neither time nor the occasion will allow me to enlarge upon these topics; and therefore, commending them to the attention of farmers, I pass on to say a few words on that other subject to which I adverted in the beginning, as one of the principal objects of the great agricultural movement of this stirring age,—the elevation of agriculture, as an avocation or profession.

Farmers of York county and Pennsylvania, political influence you have not to seek; for you enjoy it. You have the power, for you wield the majority, which happily for our country, is the source of political power. In every assembly of legislation in the United States, from the National Congress to the Legislature of the smallest State in the Union, the majority of the members are farmers. I repeat it, you have the power. Use it then, as freemen, thinking for yourselves; use it as christian men, with a good conscience and a sense of your responsibility; use it as intelligent men with a careful survey of the grounds of your action:—So use it, that you may be satisfied with yourselves; so use it, that all others, conceding as they must, your right may never envy you in its possession.

Politically, indeed, you are the salt of the earth. Be it your part to preserve the savor. There are some recent events to which I can only allude, that inspire good hopes for our country,—hopes founded upon that firm underlying stratum of common sense, which has its exponent in the agricultural population of our land. I refer to the Cuban fillibusterism, and the Kossuth extravagance. You remember how our large cities were agitated and grew wild with these unholy excitements. During the time that the grossest follies, not to say wickedness, were uttered and enacted in *them*, it was cheering to perceive, how the strong under current of public opinion in the country flowed steadily on in its true channel, undisturbed by the tempest which temporarily ruffled the surface. Here is the true corrective of all those miserable heresies, and fanaticisms, and treasonable dogmas, and deformed reforms, which wicked men, wise in their own conceit, and *strong minded women*, in their unblushing bloomerism, are fond of exhibiting to their ineffable disgrace.

They have gone astray—after their idols; let them alone!

In view of this aspect of affairs, we can but repeat the pious poet's exclamation—

> "God made the country—and man made the town!"

My friends, yours is this country; and a beautiful land has the Almighty bestowed upon you, with its hills and valleys, fountains, and fresh shades. Be it yours to improve and adorn it to the utmost, by your industry, intelligence, and taste, availing yourselves of the best means for this purpose which the art you profess, may supply.

In this way, you will elevate the dignity of your calling: This is the true way.

Allow me to speak my thoughts on this subject. It is not so much the respect of others, which you need, as your own self-respect. I venture to say you have a much keener and more abiding sense of your deficiencies, than others entertain of them, whilst I admit that the removal of these, would not only inspire confidence in yourselves, but greatly enhance their respect. Some of our agricultural leaders, have lately entertained the public with magnificent projects of a great agricultural university for the exclusive education of farmers, and grand colleges, with great model farms attached. There are institutions of this kind abroad, which are a sort of normal schools for the instruction of professors or teachers in agriculture, who are thus admirably trained to take charge of the vast estates of the princes and noblemen of those countries, and manage them in the most advantageous manner. We have not yet come to that. The projects referred to, I fear, are impracticable. I apprehend, they are wanting in adaptation. I hope to see the day, when Agricultural professorships will be added to all our higher institutions of learning. There is no incompatibility in such a scheme; but, on the contrary, such additions are proper and feasible, as time will show. Then your sons, besides what is termed a liberal education in the usual college course, will devote a portion of their time to the sciences and processes more immediately related to Agriculture; and issuing from College, instead of going to a lawyer's or physician's office, (as if fitted for nothing else,) will return to their paternal homes, with their improved intelligence, to enrich and beautify their broad acres, and "scatter blessings o'er a smiling land."

But in all enterprises, it is of importance to begin right; and I know no better plan, than to begin at the beginning. In this business of educating farmers, I am of opinion, that a good beginning has been achieved in the establishment of State and County Agricultural Societies. If we can multiply and increase these associations, which are the Common Schools of the profession,—the higher institutions will follow, in good time, and of the right sort, shaped to suit our condition, our manners, and customs. To insure this increase, I have one suggestion to make, or rather to repeat, (for I have heretofore made it, in another mode and place)—It is, to recommend township associations, in the form of farmers' clubs; which, I regard as important auxiliaries to the County Societies. I have observed in our county, I am sorry to say, a decline of the spirit in which our Agricultural Society originated. The attendance at our appointed meetings, has been gradually falling off, although we were favored with the second State exhibition. The proposition for a county agricultural fair, this year, was voted down, as inexpedient. If the associations I have recommended, had been organized in the various townships of our county, I am sure we should have experienced a different feeling on this subject. The idea was simply this, that in each township, a sufficient number of persons interested in farming, to form a farmers' club, should meet, every month or two months, at some central place, for mutual instruction; choose a president and secretary, and make up a small sum to purchase agricultural journals and works for the use of the members. It was suggested, that they should bring with them to these meetings, whatever they might find rare or remarkable in their respective neighborhoods, relate and compare their experience, observations, and trials of various methods of farming, with the results, and have memorandums made of all that should be deemed useful and worthy of preservation. Such statements as these, it was supposed, might form the subjects of their conversation:—that is,—

The average quantity, in acres, of the farms in their respective neighborhoods;—The number of hands employed in tilling them; The number of horses, oxen, mules, cattle, sheep, and swine;—The number of fields of particular farms, and the rotation of crops;—The relative quantity of woodland, meadow, and arable land, and the species of timber;—The nature of the soil,—whether limestone, gravel, or slate, &c.—the manures employed, how made or obtained, how used and with what effect.—The quantity of seed sowed or planted to the acre, the time and mode of sowing, &c., and the yield;—The time of harvesting and securing the crop, and the method of doing it;—The various crops or products raised in the respective neighborhoods, and their sale;—The prices of land, the wages of labor, and the terms and usages of renting. These and a variety of kindred topics, it was thought might be made the subjects of either written or oral communications. The advantages of such meetings were deemed to be many and obvious, nor are we without strong testimony in respect to their utility. Dr. Higgins, the State Chemist of Maryland, in his able report to the Maryland Legislature, says:—"I have witnessed the great good done by Associations of practical farmers, with frequent meetings for the discussion of Agricultural subjects, and as great aids to improvement, would recommend their formation in every neighborhood in the State." Unquestionably they would result in the improvement of the practice and business of Agriculture. But the benefit would also be felt in the self improvement of the members. The statements of such facts as have been indicated, would lead to conjectures, reasonings, discussions and the forming of judgments, to mental training, and the increased activity of the intellect. Knowledge of positive and useful facts, would be acquired; and the desire of knowledge, is always increased by its acquisition. When a club had become possessed of all such useful knowledge as the township might be supposed to afford, nothing would be more natural than the disposition to look further, and inquire after the improvements of neighboring townships. This would lead directly to the County Society; to which the members of the club, would seek to be united, as surely as the rivulet seeks the stream towards which its runs; and these township clubs, thus bringing to the County Society their local contributions, the accumulated fund would embrace whatever is most useful in the actual business and improvement of Agriculture throughout the country. But the interest and spirit of the county societies would be maintained in full vigor; and it is this, and this alone, which will insure the permanence and growth of the cause. Every thing depends upon the county societies. Let them fall away, and the State Society will soon become an effete body, and degenerate into a mere political stalking horse.

Farmers and Agriculturists, your profession is a noble one, and has ever been honored were true liberty has flourished. It is liberty which gives dignity to labor, and makes the practice of agriculture respectable. In the purer days of the great Roman Republic, no avocation maintained a higher position in the general esteem.

The poet of the seasons, addressing his degenerate countrymen, who living, he says, in luxury and pride, think such themes unworthy of their ear, indignantly adds:

> "In ancient times the sacred plough employed,
> The Kings and awful fathers of mankind;
> And some with whom compared your insect tribes,
> Are but the beings of a summer's day,
> Have held the scale of empire, ruled the storm
> Of mighty war; then with unwearied hand,
> Disdaining little delicacies, seized
> The Plough, and greatly independent lived."